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## FIG. 3

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PERFORM COMPILER/OPTIMIZER PROCESS AND GENERATE OPTIMIZED CODE

PERFORM MAP SOURCE CODE TO OPTIMIZED CODE AND GENERATE DEBUG INFO.

DEBUG INFO INCLUDES INDICATORS OF INSTRUCTIONS THAT ARE NEVER ACCESSED ONCE DEFINED (I.E. DEAD CODE); LOOP LATENCY AND INITIATION INTERVAL INFO FOR EACH LOOP; STAGE OF INSTRUCTION INFO FOR EACH INSTRUCTION IN A LOOP; INFO ON MEMORY REFERENCES WITH DATA DEPENDENCES THAT CONSTRAIN THE SCHEDULE; AND DATASPECULATIVE LOAD INSTRUCTIONS WITH POSSIBLE CONFLICTS AND LOCATION OF POSSIBLE CONFLICTS.

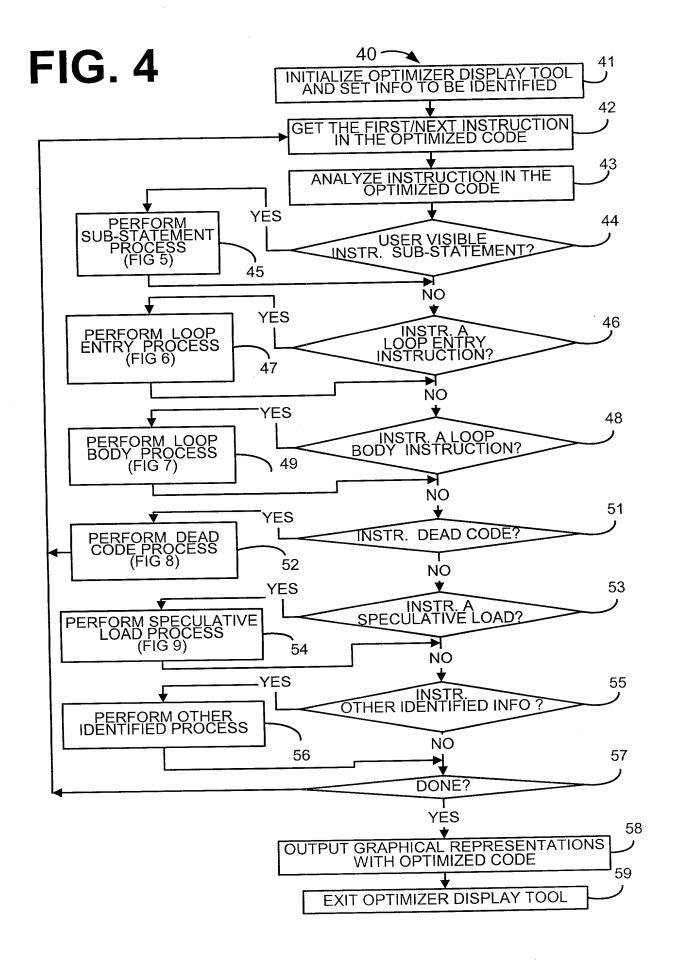
PERFORM DEBUG PROCESS AND ASSOCIATE SOURCE CODE WITH OPTIMIZED CODE

ANALYZE OPTIMIZED CODE FOR USER VISIBLE SUB-STATEMENTS; INSTRUCTIONS ASSOCIATED WITH ITERATION LATENCY; DEAD CODE - INSTRUCTIONS THAT ARE NEVER ACCESSED ONCE DEFINED; SPECULATIVE LOAD INSTRUCTIONS AND OTHER TYPES OF OPTIMIZATION ERRORS AS DEFINED AT INITIALIZATION

PERFORM OPTIMIZER DISPLAY TOOL ON SELECTED TYPES OF OPTIMIZATION INFORMATION (FIG. 4)

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FIG. 5

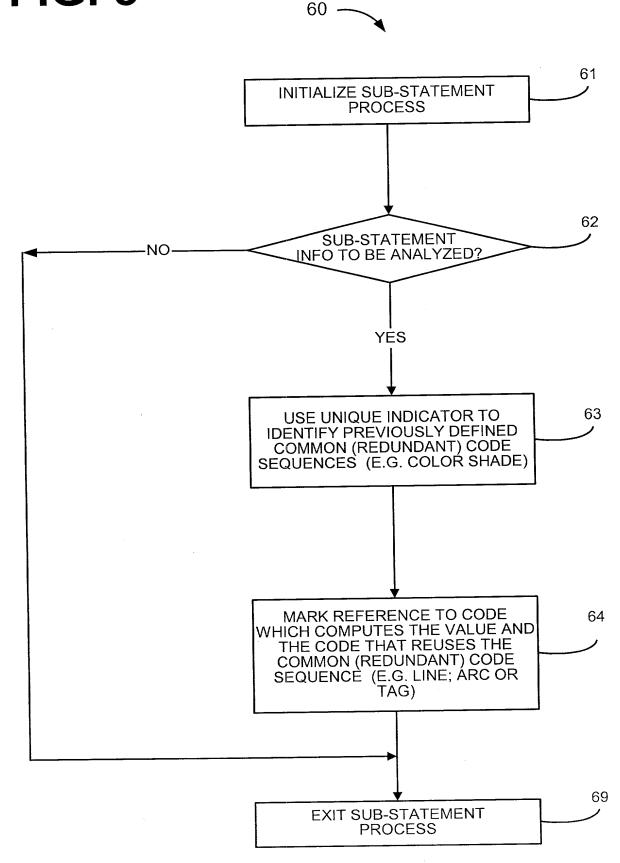
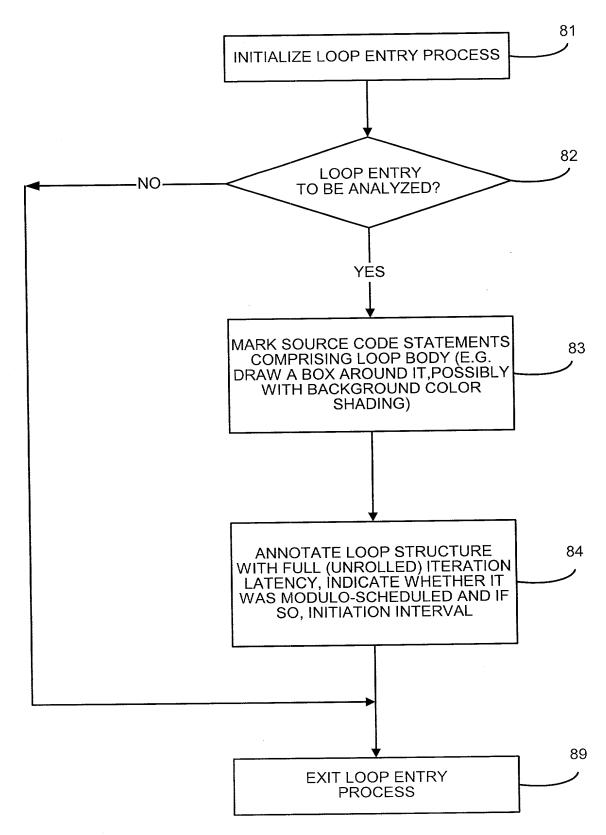
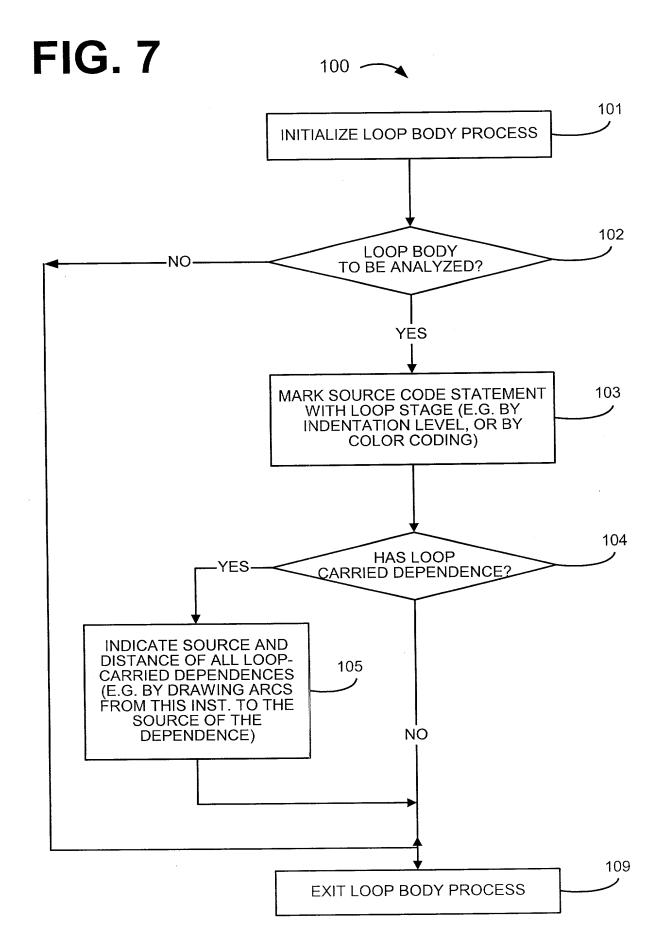


FIG. 6

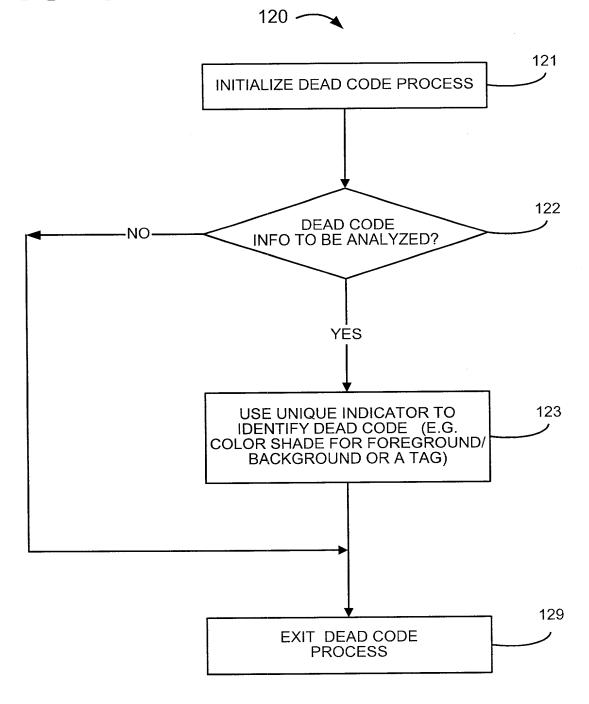


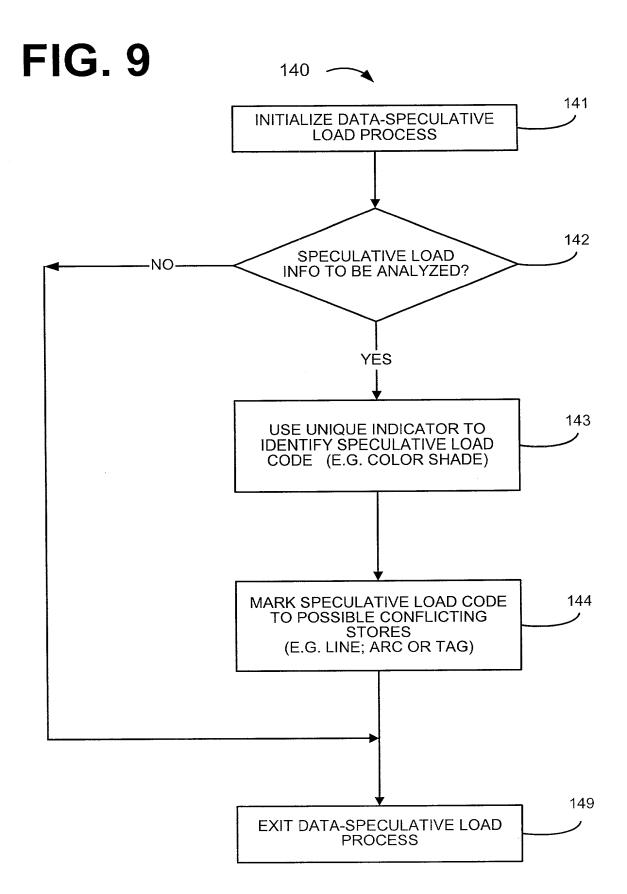




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FIG. 8





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## FIG. 10

```
[SEGMENT CODE 1 DEFINED]
                                                                                             [SEGMENT CODE 1 USED]
                                                                     [DEAD CODE]
                                                                                                                                              END
// FURTHER PROCESSING
END
                    I = 0; //INITIALIZATION
FOR (I=INIT();I<5;I++)
{</pre>
                                                                                              FOO (A+B+C) -
Z=1
                                                                                                                                  Z=2
                                                           X = A + B
                                                                                  IF I>X
                                                                                                                       ELSE
                                                                      Z=3
MAIN()
```